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ELEVATED HEPATOCYTE GROWTH FACTOR IS A NOVEL SPECIFIC MARKER OF CARDIAC AMYLOIDOSIS

Moderated Poster Contributions
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Background: Cardiac amyloidosis is an infiltrative cardiomyopathy that is challenging to diagnose and carries a poor prognosis. Early recognition and treatment can improve outcome. We hypothesized that the novel biomarkers Hepatocyte Growth Factor (HGF), Galectin-3 (GAL-3), Interleukin-6 (IL-6), and Vascular Endothelial Growth Factor (VEGF) would be elevated in cardiac amyloidosis and may be able to discriminate from non-cardiac systemic amyloidosis or other cardiomyopathies with similar clinical or morphologic characteristics.

Methods: Patients were selected according to the following groups: 1) cardiac amyloidosis (systemic amyloidosis + positive biopsy or MRI), 2) non-cardiac systemic amyloidosis; 3) LVH (LV mass index (LVMI) >115 g/m2 in men and >95 g/m2 in women with relative wall thickness (RWT) >0.44); and 4) systolic HF (LVEF ≤30% and NYHA class ≥III). Gal-3, HGF, IL-6, and VEGF were measured in stored plasma samples.

Results: HGF was markedly elevated in patients with cardiac amyloidosis compared to the other groups, including those with non-cardiac systemic amyloidosis (Table 1). Gal-3 was elevated in patients with amyloidosis with or without cardiac involvement compared to LVH and systolic HF. There was no difference in IL-6 or VEGF between groups.

Conclusion: GAL-3 is elevated in amyloidosis regardless of cardiac involvement. HGF is a specific marker that distinguishes cardiac amyloidosis from other cardiomyopathies and may discern cardiac involvement in systemic amyloidosis.

Table 1: Clinical, Echocardiographic, and Biomarker Characteristics

	Cardiac Amyloidosis (n=34)	Non-cardiac amyloidosis (n=12)	LVH (n=43)	Systolic HF (n=42)	P-value
Age, yrs	61.7 ± 10.5	58.6 ± 1.1	55.4 ± 2.6	56.1 ± 12.9	0.274
Sex, % male	61.8	58.3	55.8	57.1	0.535
LVEF, %	**53.2 ± 13.8**	**62.1 ± 4.5**	**61.2 ± 6.6**	**20.8 ± 6.9***	**0.001**
LVMI (g/m²)	136.5 ± 51.2	124.7 ± 31.8	144.4 ± 38.9	156.8 ± 39.3	0.441
RWT	**0.72 ± 0.23**	**0.65 ± 0.19**	**0.73 ± 0.31**	**0.35 ± 0.13†**	**<0.001**
HGF (pg/mL)	**1229 ± 563†**	**349 ± 210**	**222 ± 84**	**300 ± 87**	**<0.001**
GAL-3 (ng/mL)	**33.8 ± 29.6***	**63.8 ± 31.0***	**19.8 ± 9.0**	**24.0 ± 13.2**	**0.030**
IL-6 (pg/mL)	7.2 ± 2.1	3.5 ± 1.2	4.2 ± 0.6	5.3 ± 0.82	0.265
VEGF (pg/mL)	39.2 ± 5.4	25.9 ± 7.8	60.4 ± 13.2	50.0 ± 9.2	0.497

* P=0.001 vs. all others † P < 0.001 vs. all other * P<0.05 vs. LVH and systolic HF